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Agency

Solid Waste and
Emergency Response
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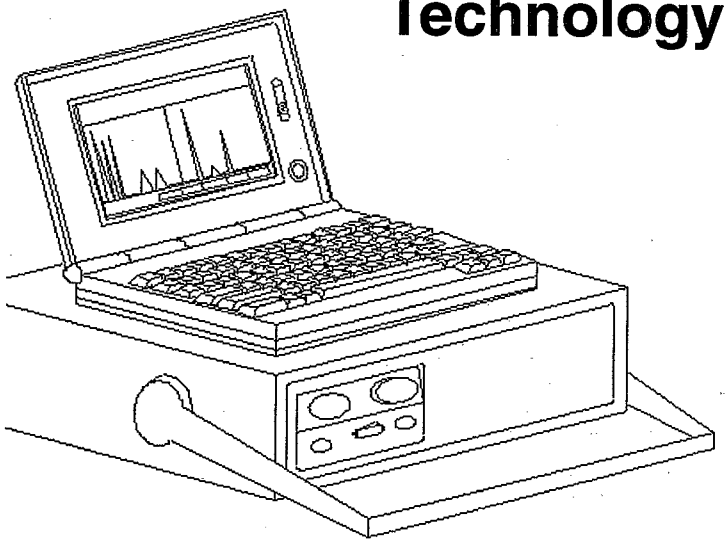
Consortium for Site Characterization Technology Fact Sheet



INTRODUCTION

As a pilot under EPA's Environmental Technology Verification (ETV) Program, the Consortium for Site Characterization Technology (CSCT) was established to increase the acceptance and use of innovative site characterization and monitoring technologies by establishing a process for the EPA verification of the performance of the technologies. The CSCT:

- Identifies, verifies, and transfers information about innovative and alternative monitoring, measurement, and site characterization technologies.

The Consortium employs a third-party verification organization (U.S. Department of Energy's Oak Ridge and Sandia National Laboratories) to develop demonstration plans, conduct the evaluations, and write the environmental technology verification reports.

Based on the needs of users, the Consortium annually solicits available vendors, selects appropriate technologies, and conducts performance evaluations. Technologies are selected based on their applicability to the identified category of need, their maturity (commercially ready, full-scale field units), and the willingness of the vendors to participate. After the field evaluation, the Consortium produces a detailed technical report on each technology accompanied by a verification statement signed by EPA which summarizes key findings.

EPA's Environmental Technology Verification (ETV) Program

The Consortium is one of twelve pilot programs under ETV, managed by EPA's Office of Research and Development. ETV was created to substantially accelerate the entrance of new environmental technologies into the marketplace by supplying technology buyers, developers, consulting engineers, states, and EPA regions with high quality data on the performance of new technologies verified by neutral third parties under the auspices of EPA. Other ETV pilots cover the following sectors:

Drinking Water Systems
Pollution Prevention/Waste Treatment
Pollution Prevention/Innovative Coatings and Coatings Equipment
Indoor Air Products
Advanced Monitoring Systems
Air Pollution Prevention and Control
EvTEC (an independent, private-sector approach pilot)
Wet Weather Flows Technologies
Pollution Prevention/Metal Finishing
Source Water Pollution Technologies
Climate Change Technologies

In these pilot areas, EPA utilizes the expertise of partner "verification organizations" to design efficient processes for conducting performance tests of innovative technologies. EPA selects its partners from both the public and private sectors including federal laboratories, states, universities, and private sector entities. Verification organizations conduct the verification activities in accordance with standard operating protocols. These protocols are developed with input from relevant stakeholders and customers.

VERIFICATION PROCESS

The Consortium supports site characterization and monitoring technology developers by assisting with selecting the sites, approving the demonstration plan, and auditing the demonstration. Data interpretation, verification report preparation, and issuance of the verification statement are the prime responsibilities of EPA and the verifying organization.

The process begins with identifying the needs of the user community by consulting with the CSCT Board of Technology Users (see p. 3). The Consortium then determines the commercial availability of technologies that meet those needs . Qualified vendors are then invited to participate in the verification process. Vendors selected for participation work with the Verification Organization to develop test plans in accordance with the Guidance Manual (see p.3). Field testing is usually done at two separate sites. Verification reports are prepared for review by EPA, the vendor, and experts (peer review). The final report (including the EPA Verification Statement) is then issued.

STATUS OF CONSORTIUM TECHNOLOGY VERIFICATION ACTIVITIES

Technologies Tested to Date

Technology demonstrations have been completed and verification reports and statements issued for two cone penetrometer/laser induced fluorescence (LIF) technologies: the Site Characterization and Analysis Penetrometer System (SCAPS) LIF Sensor Support System, operated by the U.S. Navy; and the Rapid Optical Screening Tool (ROST), operated by Fugro Geosciences.

Technology demonstrations have been completed for two other technologies: field portable X-ray fluorescence (XRF) analyzers and field portable gas chromatograph/mass spectrometer (GC/MS). The verification reports and statements for these technologies have completed the peer review stage and are awaiting final EPA sign off which is expected in the fall of 1997. Field portable XRF vendors include HNU Systems, Metorex (2 systems), Niton, Scitec, and TN Spectrace (2 systems). Field portable GC/MS vendors include Bruker-Franzen, Analytical Systems, Inc., and Viking Instruments, Inc.

In June 1997, six developers participated in a demonstration of soil and soil gas sampling devices. The developers participating are: W.L. Gore & Associates, Inc., Art's Manufacturing and Supply, Geoprobe Systems, Inc., SimulProbe, Quadrel Services, Inc., and Clements and Associates, Inc. The reports for this demonstration are in preparation. First drafts are expected for review in the second quarter of FY98.

In July 1997, a technology demonstration was completed that invo lved four PCB analysis technologies. The developers are: Dexsil Corporation, Hach, Electronic Sensor Technology, and Strategic Diagnostics. Reports for these technologies are in preparation. First drafts are expected for review in the first quarter of FY98.

Technologies Undergoing Testing

Five well-head monitoring technologies were demonstrated during the fourth quarter of FY97 at the Savannah River Site and McClellan Air Force Base. The developers participating in this demonstration are: PE Photovac, Inficon, Electronic Sensor Technology, Sentex Systems, Inc., and Innova AirTech Instruments.

Technologies to be Tested

Technologies scheduled for demonstration testing in FY98 include groundwater sampling, field extraction, and decision-support software applications.

FUTURE CONSORTIUM SOLICITATIONS- TECHNOLOGY TRACKS

In early FY98, the Consortium will publish a solicitation to identify potential technology vendors for participation in FY99 and beyond. The technology demonstrations slated for FY98 are Decision Support Software, Field Extraction, & Ground-Water Sampling.

This upcoming solicitation will focus on identifying technologies that fit into one (or more) of eight monitoring and characterization technology tracks. The tracks are: on-site chemical analysis; in situ monitoring (down hole or down well); sampling; physical characterization; decision support software; chemical

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analysis of contaminated structures; in situ bioremediation monitoring; and toxicity screening.

OUTREACH ACTIVITIES

The Consortium maintains contact with and receives feedback from State agencies, EPA Regional Offices, and the technology user community through the following panels and networks:

CSCT Board of Technology Users:

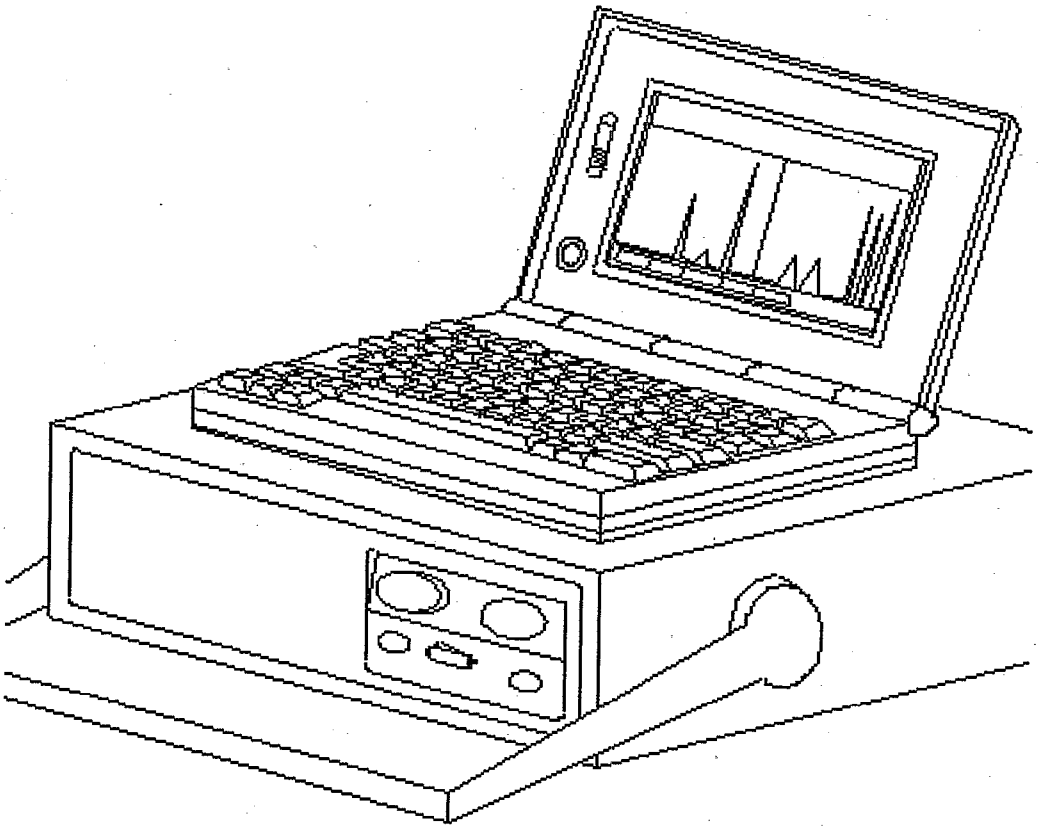
The Consortium consults regularly with the CSCT Board of Technology Users, comprised of representatives from the Federal and private technology user community (site owners), State and Federal regulatory agencies, the consulting engineering community, small business, and associations representing manufacturers and providers of field instrumentation. The Board provides information on the needs for new technologies, and it assists with the development of reports to ensure maximum utility to the user communities.

Regional Technology Advocates Network:

EPA has established a network of technology advocates in each of EPA's 10 Regional offices. The Regional Technology Advocates serve as the point of contact within their Region for the latest information on field analytical and site characterization technology developments. The Network meets monthly via teleconference to be briefed by the Consortium on progress on technology verification and other Consortium activities. The Regional Advocates also review Consortium publications and activities and provide information on the needs for new technologies in the Regions.

Interactions with State Agency Groups:

The Consortium has worked closely and coordinated with the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) and the Interstate Technology and Regulatory Cooperation (ITRC) workgroup to further assess needs and promote the acceptance of new technologies within the States.



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CSCT

CONSORTIUM FOR SITE CHARACTERIZATION PUBLICATIONS

Information on obtaining CSCT Verification Statements and Reports and other publications on site characterization technologies including those listed below are available electronically at two World Wide Web sites maintained by EPA:

http://www.epa.gov/etv (ETV Homepage)

http://clu-in.com/char1.htm (Hazardous Waste Cleanup Information (CLU-IN) Homepage)

Verification Statements and Reports

Complete:

Cone Penetrometer/Laser Induced Fluorescence (LIF)

- *U.S. Navy, Site Characterization and Analysis Penetrometer System (SCAPS) LIF Sensor and Support System,* EPA 600-R-97-019
- *Fugro Geosciences, Rapid Optical Screening Tool (ROST) LIF System,* EPA 600-R-97-020

Pending (Fall 1997):

Field Portable X-Ray Fluorescence

- HNU Systems
- Metorex (2 technologies)
- Niton
- Scitec
- TN Spectrace (2 technologies)

Field Portable Gas Chromatograph/Mass Spectrometer

- Bruker-Franzen
- Viking Instruments

Other Publications and Information Sources

Guidance Manual for the Preparation of Characterization and Monitoring Technology Demonstration Plan, Interim Final Report 5.0: October 31, 1996, available via the EPA homepage at http://www.epa.gov/etv/prtgm-02.htm

U.S. EPA/Navy Field Sampling and Analysis Technology Matrix and Reference Guide (Fall 1997)

Field Analytical and Characterization Technologies: Summary of Uses in Site Characterization (Fall 1997)

Vendor Fields Analytical and Site Characterization Technology Systems (VFACTS)

EPA CERCLA Education Center, Field-Based Characterization Technology Workshop

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Information on updated activities of the Consortium and the ETV program is also available on the World Wide Web at the following sites maintained by EPA:

http://www.epa.gov/etv (EPA Homepage)

http://clu-in.com/char1.htm (Hazardous Waste Cleanup Information (CLU-IN) Homepage)

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